

BRIEFER ARTICLES

VARIATION IN HELIANTHUS

In a recent number of this journal, Dr. GEORGE H. SHULL¹ calls attention to the dark disk found in the wild sunflower of the prairie region, but shows that certain material received from that region was heterozygous with a yellow disk recessive. It may be worth while to report that this wild plant does actually produce a yellow-disked variety, which I have observed both in Colorado and New Mexico. The western sunflower, according to RYDBERG, is separable as a distinct species, *Helianthus lenticularis* Dougl. This seems to be going too far, and I think it should be called *H. annuus lenticularis*. The color of the disk is considered a specific character in *Helianthus*; but it certainly varies within specific limits, not only in *H. annuus*, but in *H. petiolaris* also, as I have shown in *Nature*, June 19, 1902, p. 174.—T. D. A. COCKERELL, *Boulder, Colorado*.

ENDOSPERM OF PONTEDERIACEAE

(WITH FOUR FIGURES)

In a recent paper² on the seeds of Pontederiaceae, COKER makes some references to my paper published in 1898,³ to which I wish to make a brief reply. He says: "Oddly enough he completely overlooked the interesting peculiarity in the endosperm of all three genera." The reason for my overlooking such a peculiarity is clear enough, as a very casual reading of the paper will show that I made no attempt to follow endosperm formation. My study was based chiefly on *Eichhornia*, and in that genus, as grown in Washington Park, Chicago, the endosperm nucleus almost never divides, and the contents of the embryo sac disorganize without development of endosperm or embryo.

Some of my slides of *Pontederia*, however, extend beyond the fertilization stage, and since COKER's article appeared I have reexamined these, and am able in three cases to confirm his account of a division of the embryo sac into upper and lower chambers. *Fig. 3* shows the condition of the

¹ Some new cases of Mendelian inheritance. *BOT. GAZETTE* 45:103-116. 1908.

² COKER, W. C., The development of the seed in the Pontederiaceae. *BOT. GAZETTE* 44:293-301. *pl.* 23. 1907.

³ SMITH, W. R., A contribution to the life history of the Pontederiaceae. *BOT. GAZETTE* 25:324-337. *pls.* 19, 20. 1898.